

ABSTRACT

A flash memory cell and a method for fabricating the same are described. The flash memory cell comprises a substrate, a select gate, a floating gate, a gate dielectric layer, a high-voltage doped region and a source region. The substrate has a first opening thereon and a second opening in the first opening. The select gate is on the sidewall of the first opening, and the floating gate is on the sidewall of the second opening. The gate dielectric layer is between the select/floating gate and the substrate. The high-voltage doped region is in the substrate under the second opening, and the source region is in the substrate beside the first opening. In the method of fabricating the flash memory cell, the select gate and the floating gate are simultaneously formed on the side walls of the first opening and the second opening, respectively.